REMARKS

This amendment responds to the office action mailed June 6, 2006. In the office action the Examiner:

- rejected claims 1-6, 13-18 and 25-30 under 35 U.S.C. 101 as being directed to non-statutory subject matter;

- rejected claims 1-4, 6, 13-16 and 18 under 35 U.S.C. 102(e) as anticipated by Matsuda (US 2003/0225779);

- rejected claims 5 and 17 under 35 U.S.C. 103(a) as being unpatentable over Matsuda (US 2003/0225779) in view of Lewak et al. (US 6,8265,566);

- rejected claims 25-28 and 30 under 35 U.S.C. 103(a) as being unpatentable over Matsuda (US 2003/0225779) in view of Burrows (US 6,021,409); and

- rejected claim 29 under 35 U.S.C. 103(a) as being unpatentable over Matsuda (US 2003/0225779) in view of Burrows (US 6,021,409) and further in view of Lewak et al (US 6,826,566).

After entry of this amendment, the pending claims are: claims 1, 3-6, 13, 15-18, 25, 27-30, and 37-48 (27 claims, 3 of which are independent claims).

Remarks Concerning Revised Figures

Revised Figure 9 is included in Appendix A. The last sentence of block 904 in figure 9 has been corrected to remove a superfluous "that".

Overview of Changes to Claims

Claim 1 has been amended to clarify that the expression of one or more numerical index terms generated by the method of the present application includes a numerical index term that "includes information indicative of an integral portion of a logarithm of the boundary number." Claim 1 has also been amended to clarify that the documents are identified by searching a document index. Further clarifying changes have been made as to matters of form. Hence, claim 1, as presently amended, reads:

A method of querying number-range searches,
comprising:
      receiving a number-range search query having a
number range, wherein the number range includes a boundary
number;
      generating an expression of numerical index terms
based on the boundary number, wherein a respective numerical

index term in the expression includes <u>information indicative of</u>
<u>an integral portion of a logarithm of the boundary number</u>; and
searching a document index using the expression to
identify one or more documents containing numbers that
satisfy the expression.

(emphasis added)

Claims 3-6 depend from claim 1, and hence have been amended for clarification or to correct antecedents, as needed, due to the amendments to claim 1.

Independent claims 13 and 25 have been amended in ways similar to claim 1. Claims 15-18 depend from claim 13 and claims 27-30 depend from claim 25, and hence these claims have also been amended for clarification or to correct antecedents, as needed, due to the amendments to their parent claims.

Dependent claims: 2, 7-12, 14, 19-24, 26, 31-36 have been cancelled.

New claims 37-40, 41-44, and 45-48 depend from claims 1, 13, and 25, respectively.

Remarks Regarding Information Disclosure Statement

The Examiner did not consider the Information Disclosure Statement (IDS) submitted by Applicant on July 28, 2005, since the wrong IDS was imaged to the file wrapper for this application. On July 28, 2005, Applicant submitted the attached IDS but this IDS was misfiled by the Patent Office. A copy of the postcard acknowledging receipt by the Patent Office on July 28, 2005 is also enclosed, and it is noted that due to the fact that this IDS was filed prior to the issuance of the first Office Action, Applicant has not paid the fees required under 37 C.F.R. 1.97(c).

Detailed Response 35 U.S.C. 101

In the present Office Action the Examiner has rejected pending claims 1-6, 13-18, and 25-30 under 35 U.S.C. 101 as directed to non-statutory subject matter, specifically, as directed to an abstract idea. The Applicant disagrees and traverses.

The last element of independent claim 1, as currently amended, recites (emphasis added):

searching a document index using the expression *to*
identify one or more documents containing numbers that satisfy
the expression.

In rejecting claim 1 as directed to non-statutory subject matter, the Examiner states that "a method of querying number-range searches" fails to contain a concrete, useful, and tangible result. However, Applicant submits that read in its entirety, claim 1 does yield a

concrete, useful, and tangible result. This is because claim 1 is a method which yields the result of the identification of "one or more documents containing numbers that satisfy the expression." Applicant submits that the identification of documents that satisfy a search query is a concrete, useful, and tangible result. Hence, the identification of "documents containing numbers that satisfy the expression" is a concrete, useful, and tangible result that can, in one embodiment of the present invention, enable a search engine to query number-range searches.

Since independent claim 1 claims a method yielding a concrete, useful, and tangible result, it is directed to statutory subject matter and is therefore patentable under 35 U.S.C. 101. Claims 3-6 depend from claim 1, so they similarly yield a concrete, useful, and tangible result and are also patentable under 35 U.S.C. 101. Removal of this ground for rejection is requested.

Examiner also rejects independent claims 13 and 25 as directed to non-statutory subject matter, specifically, as directed to an abstract idea. However, similar to claim 1, these claims include elements directed to the identification of "one or more documents containing numbers that satisfy the expression" which is a concrete, useful, and tangible result. Claims 15-18 depend from claim 13 and claims 27-30 depend from claim 25, so they similarly yield a concrete, useful, and tangible result. Hence, for reasons similar to those discussed above regarding claim 1, these claims are also patentable under 35 U.S.C. 101. Removal of this ground for rejection is requested.

Detailed Response 35 U.S.C. 102(b)

In the present Office Action the Examiner has rejected pending claims 1-4, 6, 13-16, and 18 as anticipated by Matsuda. The Applicant disagrees and traverses.

Independent claim 1, as currently amended, recites, among others, the following limitation (emphasis added):

> generating an expression of numerical index terms
> based on the boundary number, *wherein a respective numerical*
> *index term in the expression includes information indicative of*
> *an integral portion of a logarithm of the boundary number*;

The Examiner cites various sections of Matsuda in arguing that Matsuda anticipates claim 1. The main teaching of Matsuda, however, is the use of tokens generated from the binary value of a numeric value. For example, in paragraph [0010], Matsuda discloses (emphasis added):

a binary value is determined for each of the numeric values. *For each numeric value, the binary value is tokenized into a plurality of bit tokens where each of the plurality of bit tokens includes a different number of bits from the binary value.*

As currently amended, claim 1 includes the limitation of "a respective numerical index term in the expression includes information indicative of an integral portion of a logarithm of the boundary number." It is noted that the integral portion of the logarithm of a number indicates the order of magnitude or decimal placement of the number. Matsuda does not teach or disclose this limitation. In contrast, the tokens disclosed in Matsuda are based *only* on the binary value of a numeric value and Matsuda fails to disclose how any other information, e.g., order of magnitude or decimal placement, can be represented using the binary tokens.

For at least the reasons discussed above, Matsuda does not teach or disclose all of the claim limitations of claim 1. And since Matsuda neither teaches nor discloses each of the claim limitations of claim 1, it does not anticipate this claim. And since dependent claims 3-6 include the limitations of their parent claim, Matsuda does not anticipate these claims, either. Removal of this ground for rejection is requested.

Independent claim 13, as currently amended, like claim 1, recites the limitation of "a respective numerical index term in the expression includes information indicative of an integral portion of a logarithm of the boundary number." Hence for at least the reasons discussed above in relation to claim 1, Matsuda does not teach or disclose each of the claim limitations of claim 13. And since Matsuda neither teaches nor discloses each of the claim limitations of claim 13, it does not anticipate this claim. And since dependent claims 15, 16 and 18 include the limitations of their parent claim, Matsuda does not anticipate these claims, either. Removal of this ground for rejection is requested.

Detailed Response 35 U.S.C. 103

In the present Office Action the Examiner has rejected pending claims 5 and 17 as being unpatentable over Matsuda in view of Lewak. The Applicant disagrees and traverses.

As explained above, Matsuda does not teach or disclose the limitation of "a respective numerical index term in the expression includes information indicative of an integral portion of a logarithm of the boundary number," as required by both independent claims 1 and 13. Dependent claims 5 and 17 have the same limitation. Like Matsuda, Lewak neither teaches nor discloses this limitation. Since the cited combination does not achieve all of the claim limitations, it is not *prima facie* obvious. Removal of this ground for rejection is requested.

In the present Office Action the Examiner has rejected pending claims 25-28 and 30 as being unpatentable over Matsuda in view of Burrows. The Applicant disagrees and traverses.

As discussed above in relation to claims 1 and 13, Matsuda does not teach or disclose the limitation of "a respective numerical index term in the expression includes information indicative of an integral portion of a logarithm of the boundary number." Like claims 1 and 13, independent claim 25 also includes this limitation. Dependent claims 27, 28, and 30 all have the same limitation. Like Matsuda, Burrows neither teaches nor discloses this limitation. Since the cited combination does not achieve all of the claim limitations, it is not *prima facie* obvious. Removal of this ground for rejection is requested.

In the present Office Action the Examiner has rejected pending claim 29 as being unpatentable over Matsuda in view of Burrows, and in further view of Lewak et al. The Applicant disagrees and traverses.

As explained above, Matsuda does not teach or disclose the limitation of "a respective numerical index term in the expression includes information indicative of an integral portion of a logarithm of the boundary number," as required by independent claim 25. Dependent claim 29 has the same limitation. Like Matsuda, neither Burrows nor Lewak teach or disclose this limitation. Since the cited combination does not achieve all of the claim limitations, it is not *prima facie* obvious. Removal of this ground for rejection is requested.

In light of the above amendments and remarks, the Applicant respectfully requests that the Examiner reconsider this application with a view towards allowance. The Examiner is invited to call the undersigned attorney at (650) 843-4000, if a telephone call could help resolve any remaining items.

Respectfully submitted,

Date: October 9, 2006
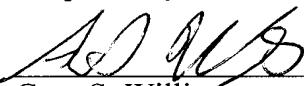
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Appendix A
Revised Figures (see attached copies)

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